

CLAIMS

1. A method for determining the age of an object such as a product containing volatile components, comprising the steps of

measuring a first strength of a first scent with a first electronic sensor, the decay rate (α_1) of said first scent being known;

measuring simultaneously a second strength of a second scent with a second electronic sensor, the decay rate (α_2) of said second scent being known

calculating a current scent ratio (σ) of the two scent strengths; and

determining the age of the object starting from a reference time for which a reference scent ratio (σ_0) of said scent strengths has been registered.

2. The method of claim 1, wherein the determining step is performed by applying to said current scent ratio σ the following formula giving the age t of the product:

$$t = (\alpha_1 - \alpha_2)^{-1} \cdot \ln\left(\frac{\sigma}{\sigma_0}\right),$$

where σ_0 designates said reference scent ratio, and α_1 and α_2 designate said decay rates of said first and second scents respectively.

3. The method of claim 1, wherein the determining step is performed by comparing the current scent ratio (σ) to preregistered data corresponding to respective age values.

4. The method of claim 1, wherein said reference scent ratio (σ_0) is determined by measuring the respective first and second scent strengths at an initial time from which the age of the product is to be determined.

5. The method of claim 1, wherein said decay rates (α_1, α_2) are determined during a characterization step of sensors measuring said first and second scents.

6. The method of claim 1, wherein said first and second scents are included in at least one volatile compound sprayed on said product.

7. The method of claim 6, wherein said reference scent ratio (σ_0) is preregistered and corresponds to the scent strengths when spraying said compound.

8. A method of determining the freshness of goods from a reference time, implementing the method according to claim 1.

9. A method of marking an object with a volatile identification code, comprising the steps of spraying at least two volatile components onto the object, said components being chosen for containing the respective first and second scents of the method according to claim 1.

10. A method of sealing an object with a volatile component, comprising the steps of introducing into an impermeable seal attached to the object at least two volatile components, said components being chosen for containing the respective first and second scents of the method according to claim 1, and said reference scent ratio (σ_0) corresponding to the scent strengths ratio when sealing.

11. The method of claim 10, wherein the seal is considered to have been broken if said current scent ratio (σ) differs from said reference scent ratio (σ_0) by more than an acceptable error ε .

12. A system for determining the age of a product containing volatile components, comprising:

at least two electronic sensors respectively responsive to at least a first scent and a second scent;

a calculating unit for calculating a current scent ratio (σ) of the respective signal strengths delivered by the two sensors, and for extracting the age of the object from a reference time for which a reference scent ratio (σ_0) of the respective signal strength is registered.